NORTHWEST MOUNTAIN REGION RUNWAY INCURSION ACTION TEAM EVALUATION

Spokane International Airport
December 11, 2001

Jim Greene

Regional Runway Safety Program Manager

Northwest Mountain Region
Federal Aviation Administration

Sedan versus DC-10

Definition
of Runway Incursion

Any occurrence at an airport involving:

- **an aircraft**
- **a vehicle**
- **a person**
- **or an object**

on the ground that creates a collision hazard or results in loss of separation with an aircraft taking off, intending to take off, landing, or intending to land.
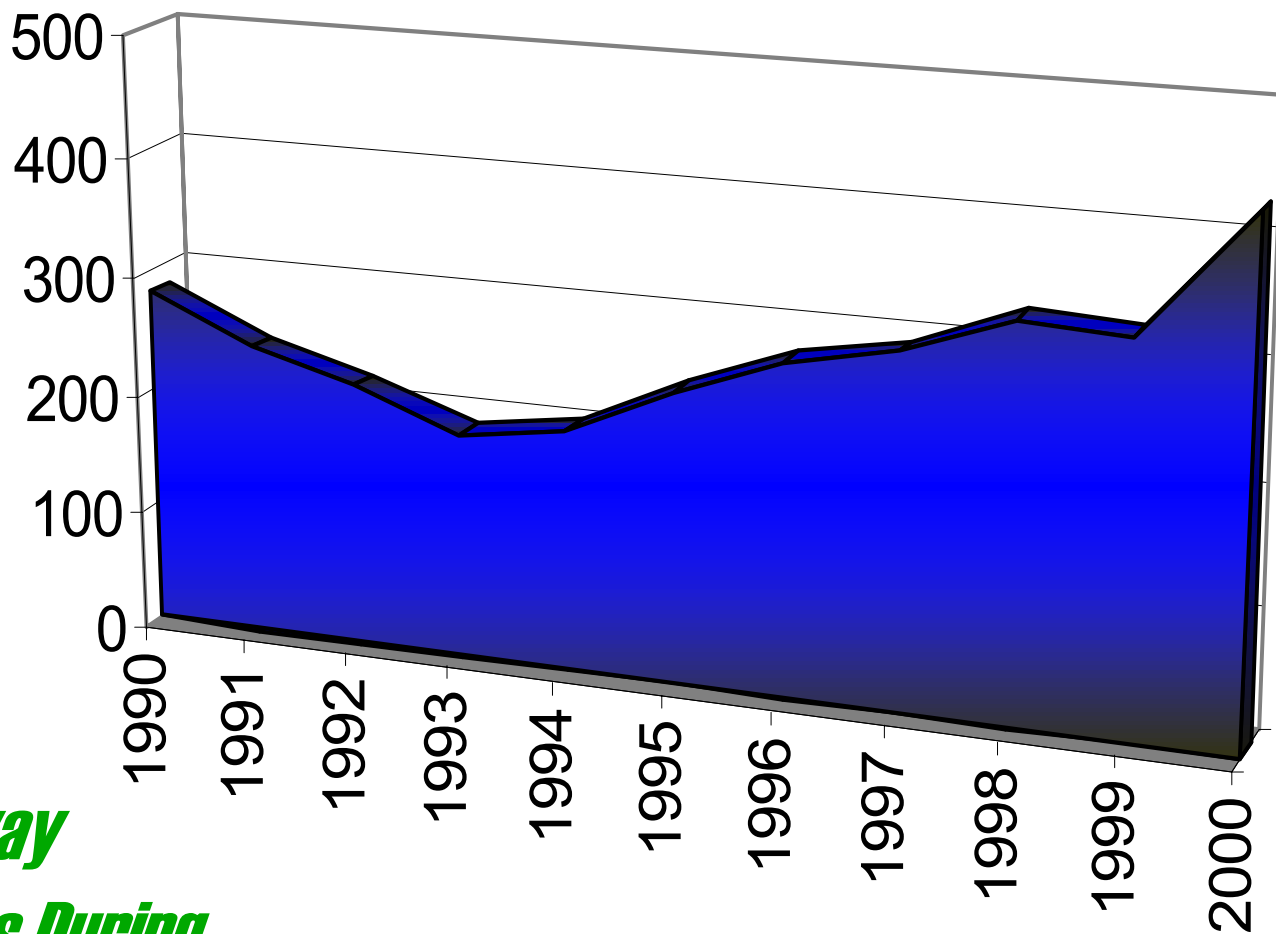
Runway Incursion Types

Runway incursions result from three types of surface incidents:

- **Operational Errors (OE)**

- **Pilot Deviations (PD)**

- **Vehicle/Pedestrian Deviations (V/PD)**

Trends

500
400
300
200
100
0

1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000

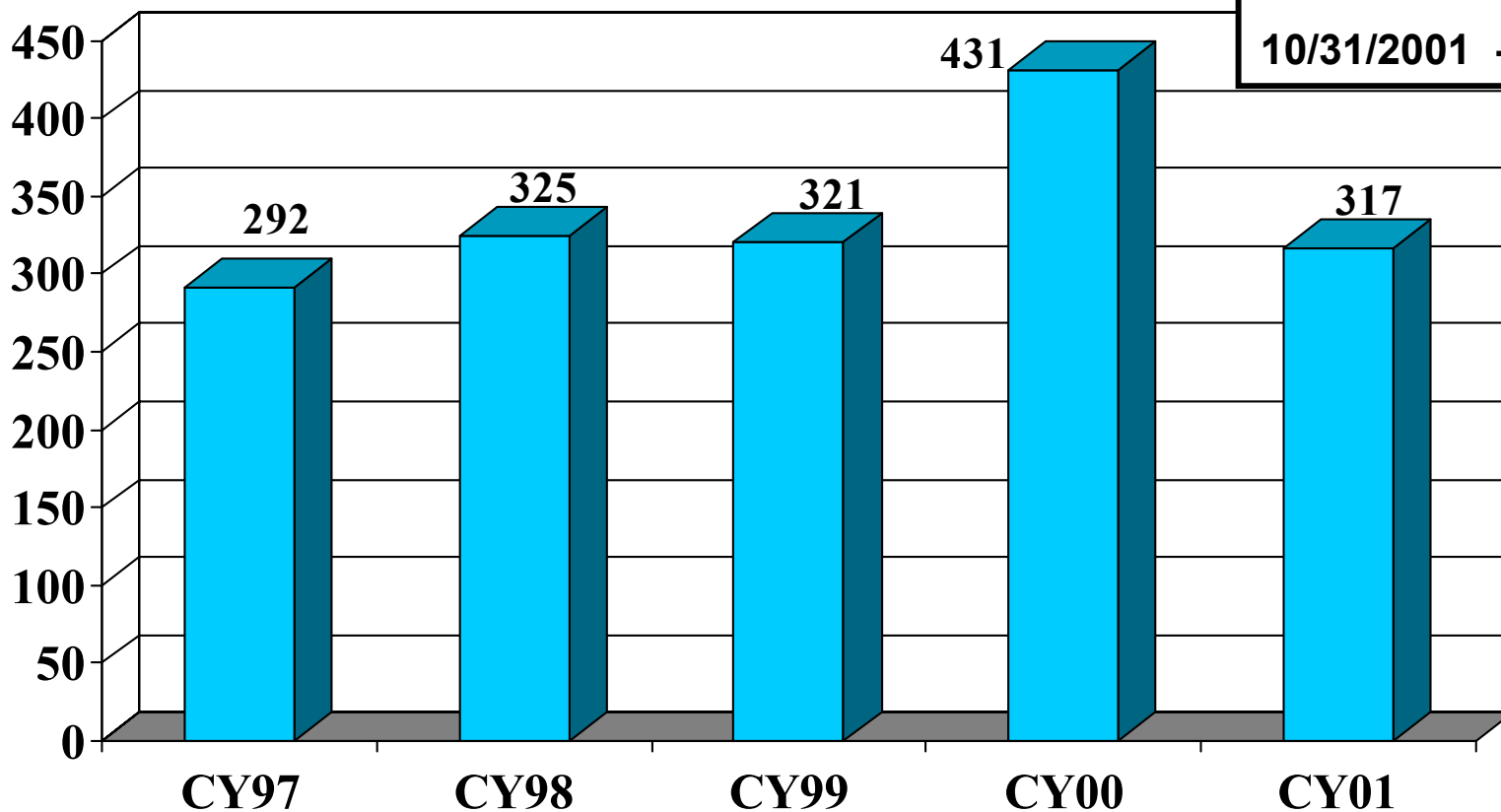*431 Runway Incursions During CY 2000*
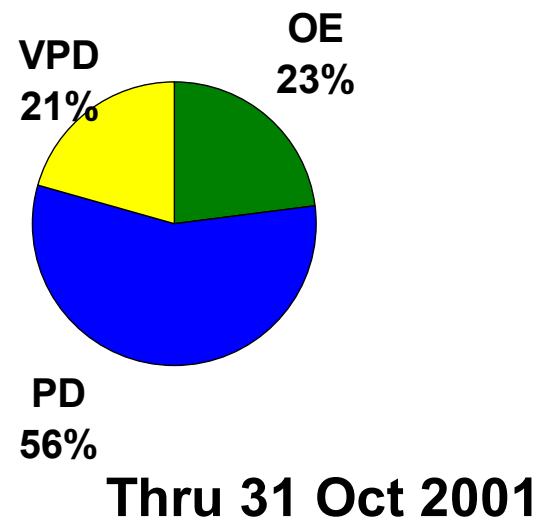
RUNWAY INCURSIONS

CY97 to DATE
(as of 10/31/01)

YTD Comparisons

10/31/2000 -- 366

10/31/2001 -- 226

Trends - **Incursions by type**

VPD 16%
OE 28%
PD 56%

1998

OE 24%
VPD 19%
PD 57%

1999

OE 20%
VPD 20%
PD 60%

2000

VPD 21%
OE 23%
PD 56%

Thru 31 Oct 2001
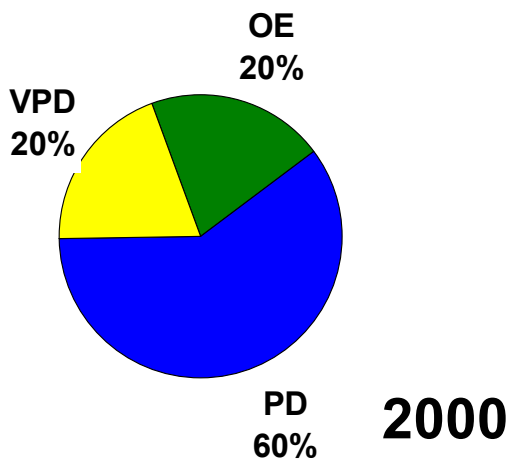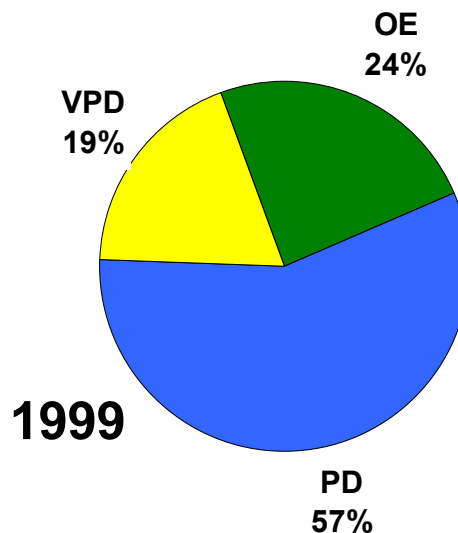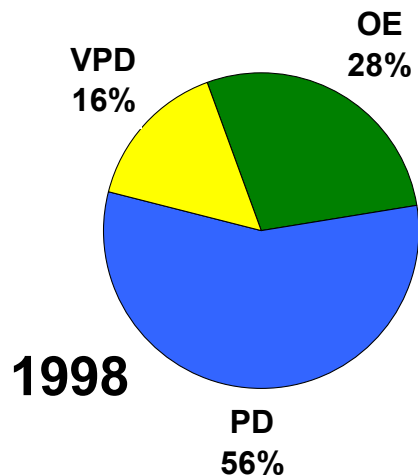
Trends

Pilot Deviations by operations type
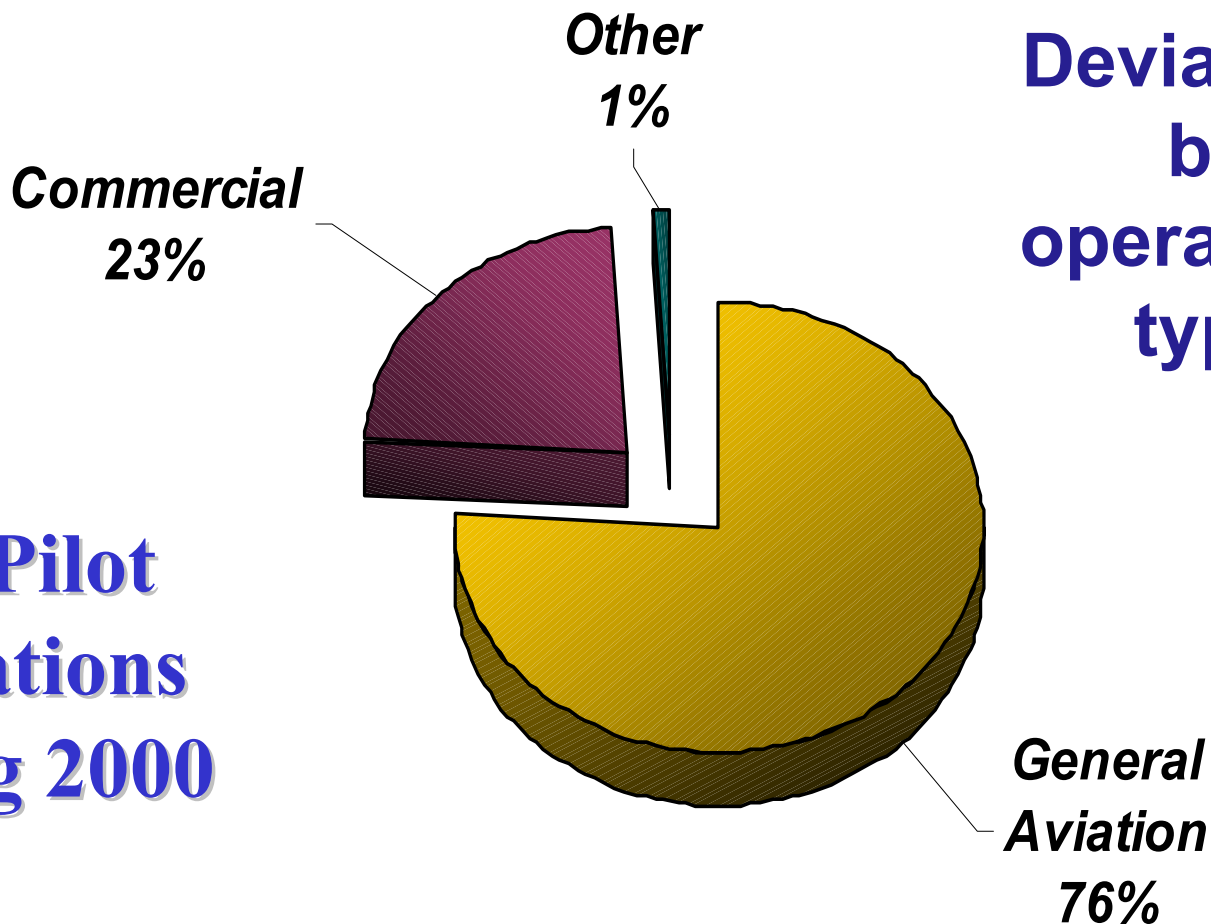
256 Pilot Deviations during 2000

Other 1%

Commercial 23%

General Aviation 76%

Top Incursion Airports
CY 2000

LOCATION	LOC ID	OPS	RI	RATE
North Las Vegas Arpt, NV	VGT	229,703	16	6.97
Montgomery Field/San Diego, CA	MYF	260,235	9	3.46
Fort Lauderdale Exec, FL	FXE	263,359	9	3.42
Merrill Field, Anchorage, AK	MRI	201,148	8	3.98
Long Beach Arpt, CA	LGB	416,766	8	1.92
Logan Arpt, Boston, MA	BOS	512,985	8	1.56
Los Angeles, CA	LAX	786,421	8	1.02
Jeffco Arpt, Denver, CO	BJC	177,319	7	3.95
Concord Arpt, CA	CCR	212,112	7	3.30
Orange Co/John Wayne Arpt, Santa Ana, CA	SNA	405,473	7	1.73
Santa Barbara, CA	SBA	163,865	6	3.66
Lambert Fld, St. Louis, MO	STL	490,779	6	1.22
Phoenix Sky Harbor Arpt, AZ	PHX	632,360	6	0.95
Troutdale Arpt, OR	TTD	76,252	5	6.56
Teterboro Arpt, NJ	TEB	272,201	5	1.84

Top Incursion Airports
CY 2000

LOCATION	LOC ID	OPS	RI	RATE
San Jose Arpt, CA	SJC	300,365	5	1.67
Bridgeport, CT	BDR	90,760	4	4.41
Greater Rockford Arpt, IL	RFD	94,571	4	4.23
McGhee Tyson Airport Knoxville, TN	TYS	152,330	4	2.63
Providence, RI	PVD	157,470	4	2.54
Sarasota/Bradenton Arpt, FL	SRQ	174,515	4	2.29
Palwaukee Muni, Chicago, IL	PWK	185,236	4	2.16
Albuquerque, NM	ABQ	233,632	4	1.71
Midway Arpt, Chicago, IL	MDW	303,192	4	1.32
Salt Lake City, UT	SLC	370,681	4	1.08
San Francisco, CA	SFO	437,186	4	0.92
Newark, NJ	EWR	461,457	4	0.87
Cincinatti-Covington Arpt, OH	CVG	486,590	4	0.82
O'Hare, Chicago, IL	ORD	914,131	4	0.44

Sweeper versus DC-9

RISK ASSESSMENT

Why We Assessed Data

- As a result of feedback from 2000 Summit, needed to place runway incursions into another context

- Need a better way to track incursions

- Need a better understanding of where incursions happen

- Need a way to analyze data to get at causal factors

- Need to describe clearer picture of runway incursion incidents – *Not every incursion is a Tenerife*

Definitions

A Separation decreases to a point where the margin of safety is so low that the participants <u>barely avoid a collision</u>.*

B Separation decreases to a point where a <u>significant potential for a collision</u> existed.

C Separation decreases, or the potential for separation to decrease exists, <u>but ample time and distance exist</u> to avoid a potential collision.

D Meets the definition of a runway incursion, with <u>little or no risk of a collision</u>.

* **The data contained in category A includes all accidents that occurred as a result of runway incursions (1997-2000), one in LaGuardia, NY & one in Sarasota, FL.**

Not all runway incursions are "created equal"

Case 1	Case 2
This incident meets the definition of a runway incursion, but there is little or no chance of collision.	This is a severe situation where the margin of safety is so low that a collision is barely avoided.
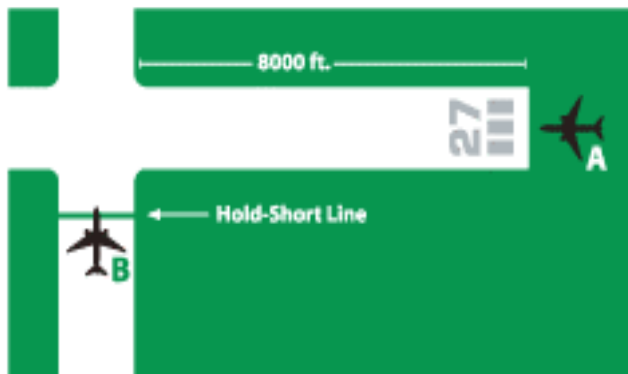
Case 1:
▶ The potential for a collision is low

▶ Most frequently reported incursion
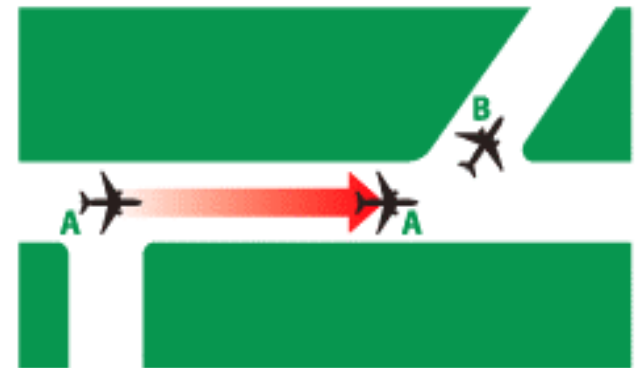
Case 2:
▶ Potential for a collision is high

▶ Typifies the common perception of a runway incursion

▶ More severe but less frequent

Runway Incursion Severity

The two simple cases illustrate that a variety of dimensions can dramatically impact the severity of a runway incursion.
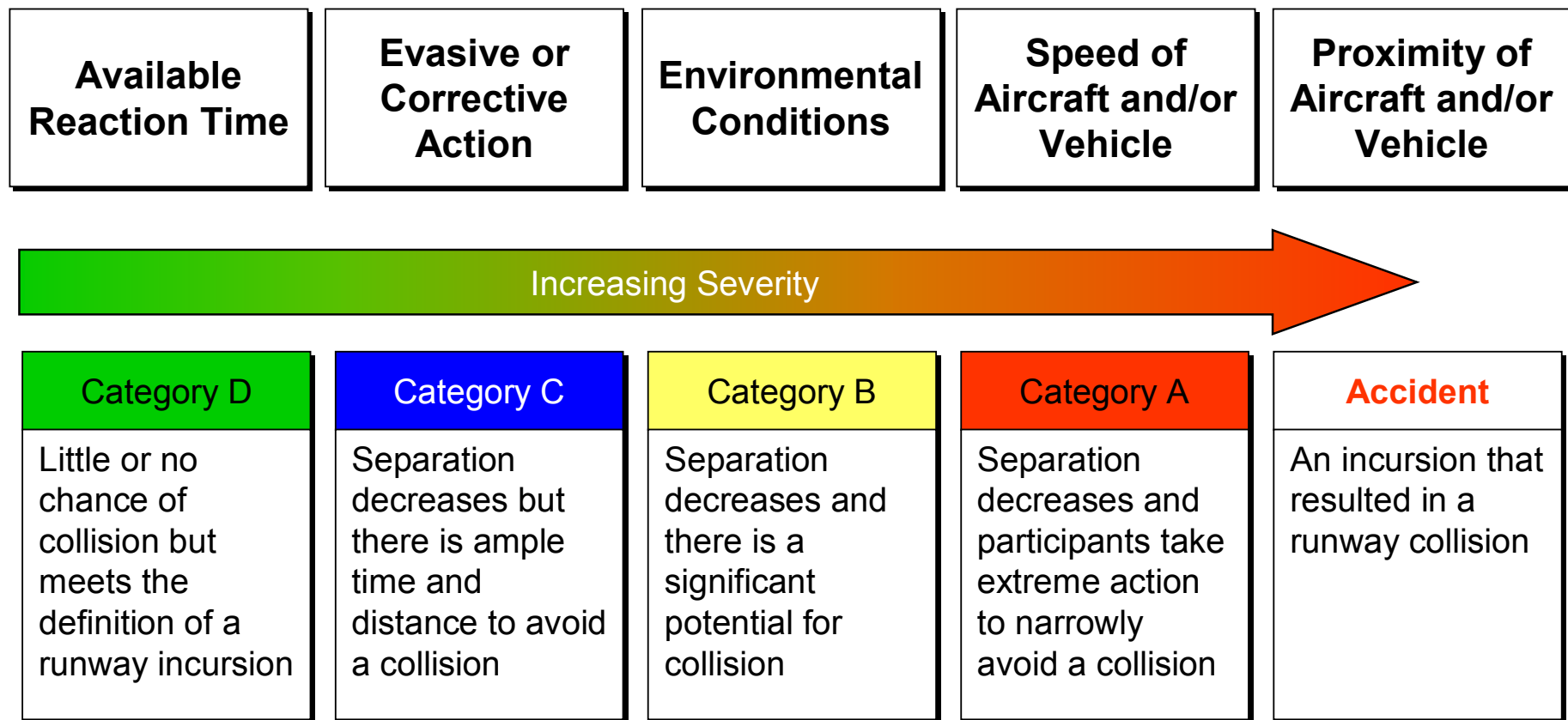
Available Reaction Time	Evasive or Corrective Action	Environmental Conditions	Speed of Aircraft and/or Vehicle	Proximity of Aircraft and/or Vehicle

Increasing Severity →

Category D	Category C	Category B	Category A	Accident
Little or no chance of collision but meets the definition of a runway incursion	Separation decreases but there is ample time and distance to avoid a collision	Separation decreases and there is a significant potential for collision	Separation decreases and participants take extreme action to narrowly avoid a collision	An incursion that resulted in a runway collision

Top 10 Airports
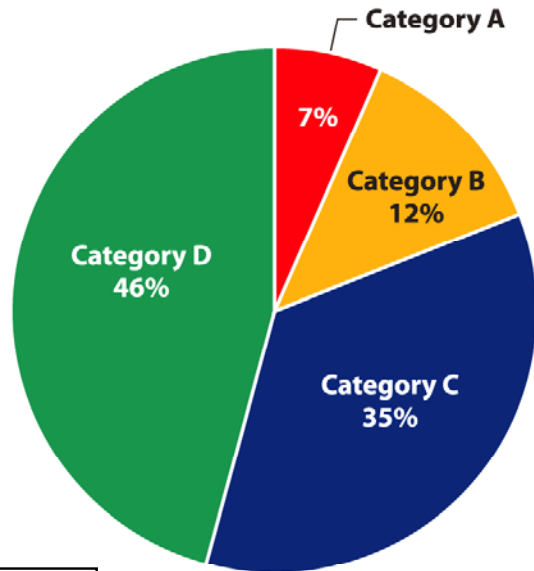Runway Incursion TYPE
1997 - 2000
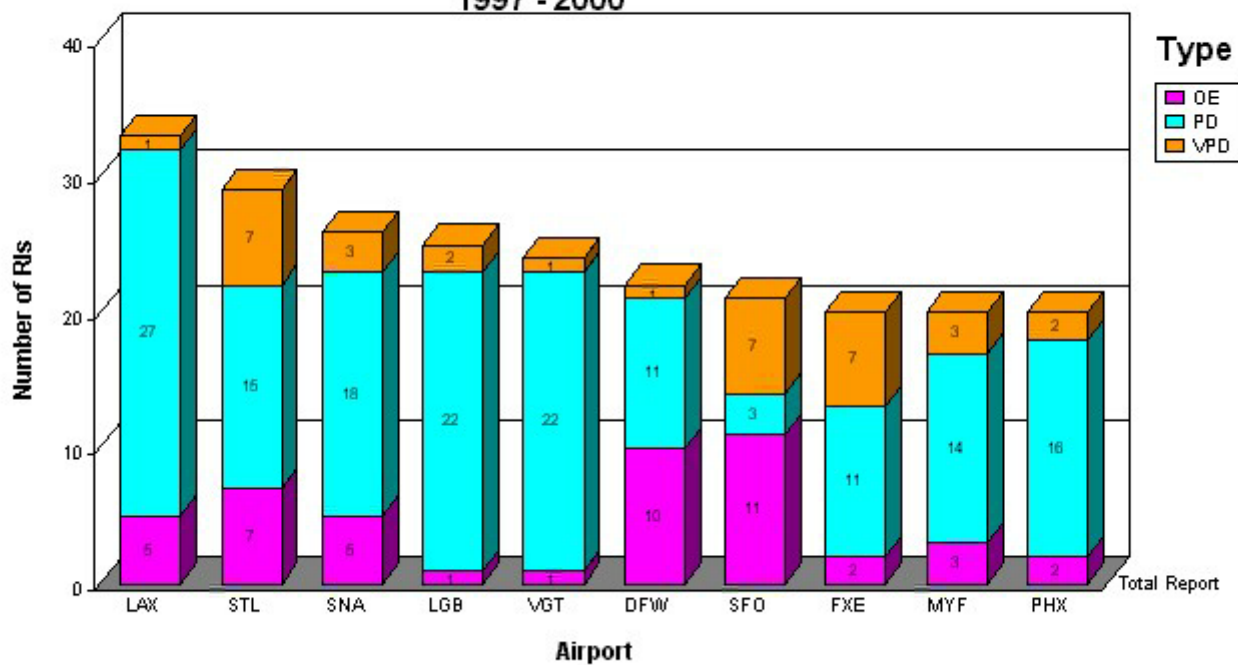
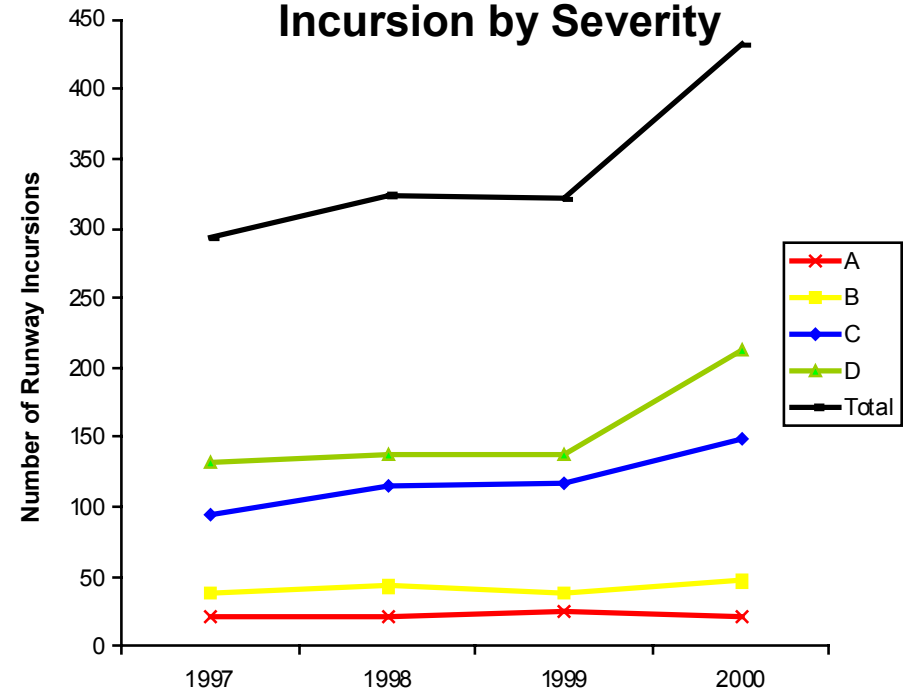# Number of Reported Runway Incursions by Severity

Figure 4.
Severity Distribution of Reported Runway Incursions 1997–2000

- Category A 7%
- Category B 12%
- Category C 35%
- Category D 46%

Total =1359

Number of Reported Runway Incursion by Severity

Number of Runway Incursions — Legend: A, B, C, D, Total

X-axis: 1997, 1998, 1999, 2000

Note:
- *The total numbers are: 292, 325, 321, 431*
- *Accidents are listed as A events (1accident in 1997, 2 accidents in 2000)*
- *Does not include 10 events with insufficient data*

▸ The distribution of runway incursion severity categories from 1997 to 2000 indicates that the majority (81%) of the incidents was comprised of Category C & D events.
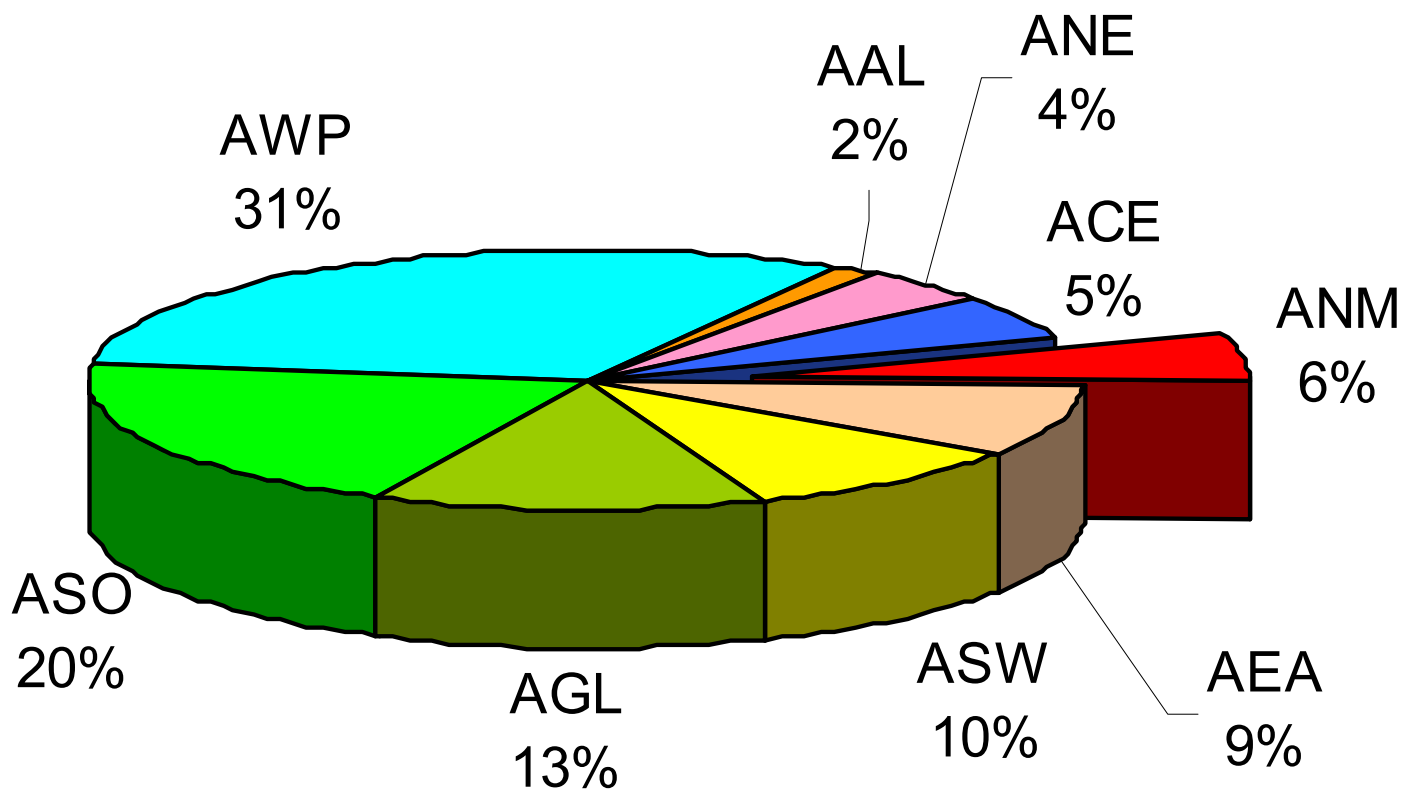
▸ There were 110 more reported runway incursions in 2000 than in 1999. Category C & D events accounted for 106 out of these 110 events.

% of Total Runway Incursions

Legend:
- AAL
- ANE
- ACE
- ANM
- AEA
- ASW
- AGL
- ASO
- AWP

AWP 31%
AAL 2%
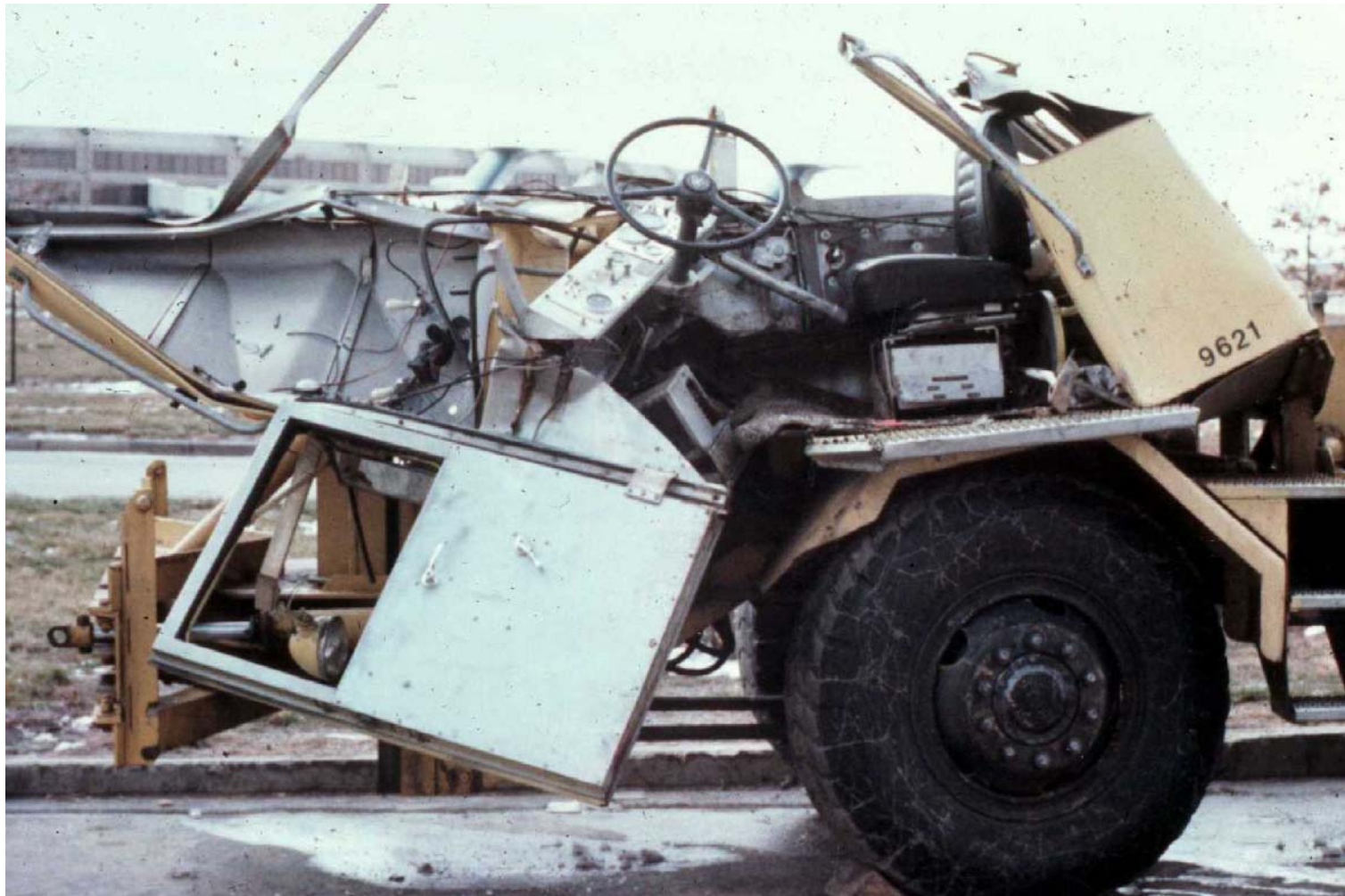ANE 4%
ACE 5%
ANM 6%
AEA 9%
ASW 10%
AGL 13%
ASO 20%

Primary Causes of Runway Incursions

- Breakdown in Pilot/Ground Vehicle/Controller Communications

- Lack of Airport Familiarity

- Loss of Situational Awareness

Snow Plow versus Wingtip

Runway Safety Program

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In The Cockpit ▶

The Tower

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Human Element

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Archives

Message from
Mr. Harrison Ford
Real Player 8 Basic
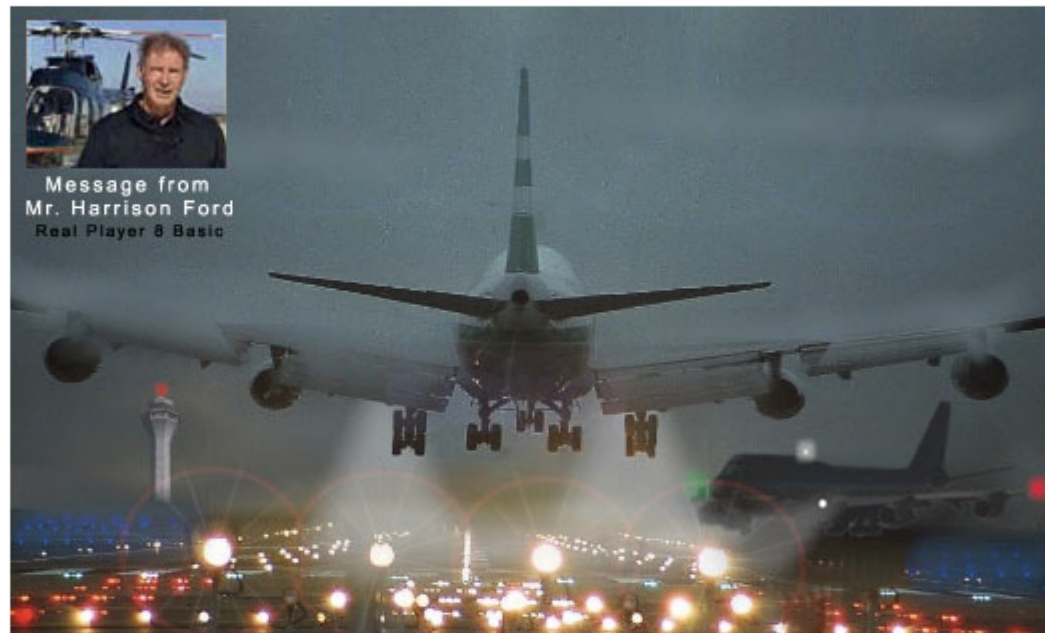
Contact Webmaster   Web Site Policy & Issues

99724

Runway Safety Program
what's new

FAA Runway Safety Report

Get Acrobat Reader — Adobe   real   WinZip

The FAA has recently developed and published the National Blueprint for Runway Safety, which provides a structured plan to improve runway safety across the nation. The Blueprint outlines several initiatives aimed at increasing runway safety. As part of implementing the Blueprint, the FAA has analyzed the severity of runway incursions for the first time. This analysis of runway incursion severity trends at towered airports in the United States will help guide implementation of these safety-related initiatives. Download report...(link to report).

Options ▼

Driving on the Airport Operations Area

The video, "Driving on the Airport Operations Area," and the study guide are essential elements in improving communications and operations when driving on any airport operations area. While this training is geared toward tower-controlled airports, any person driving on airport premises can benefit from its content. The focus of these training materials is to enhance the safety of vehicle operations on the airfield.

Options ▼

National Blueprint for Runway Safety

The Runway Safety Program is pleased to present the National
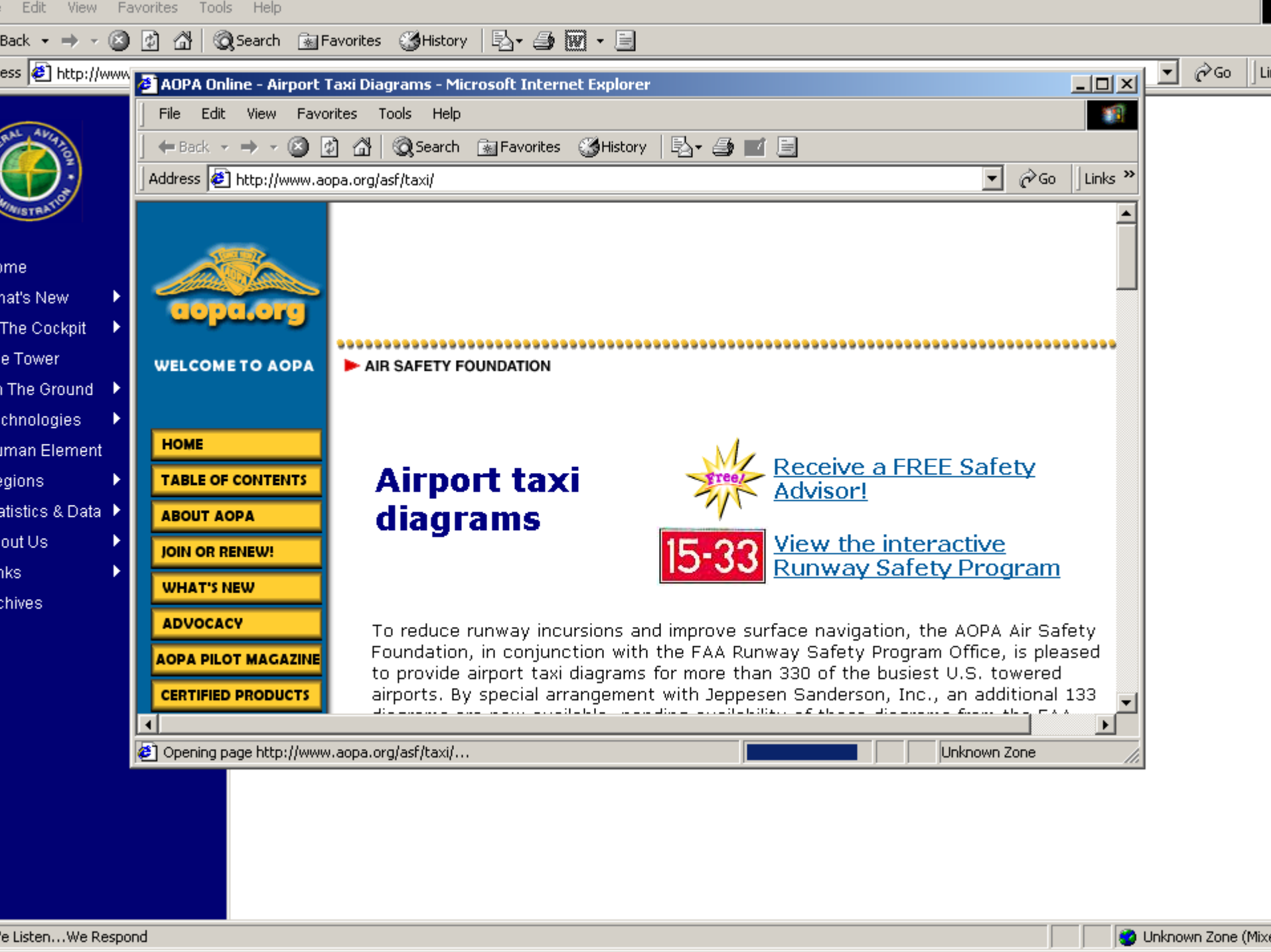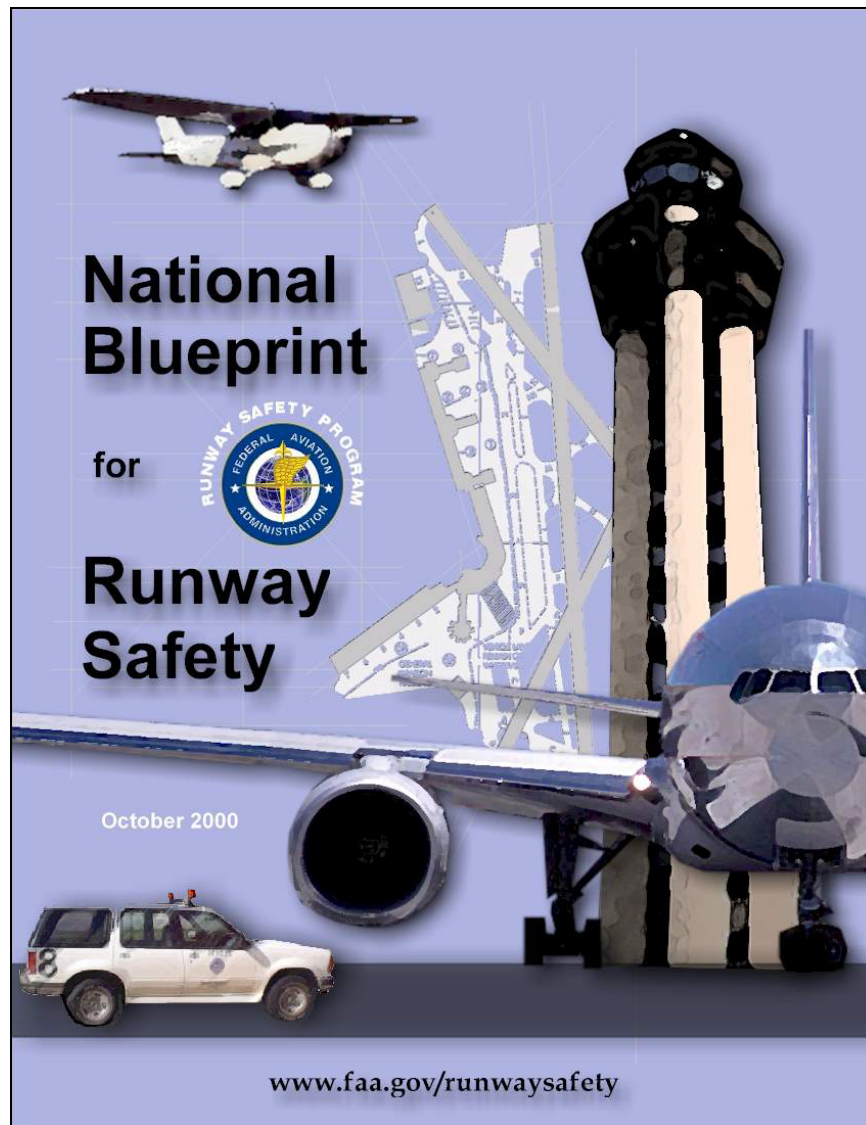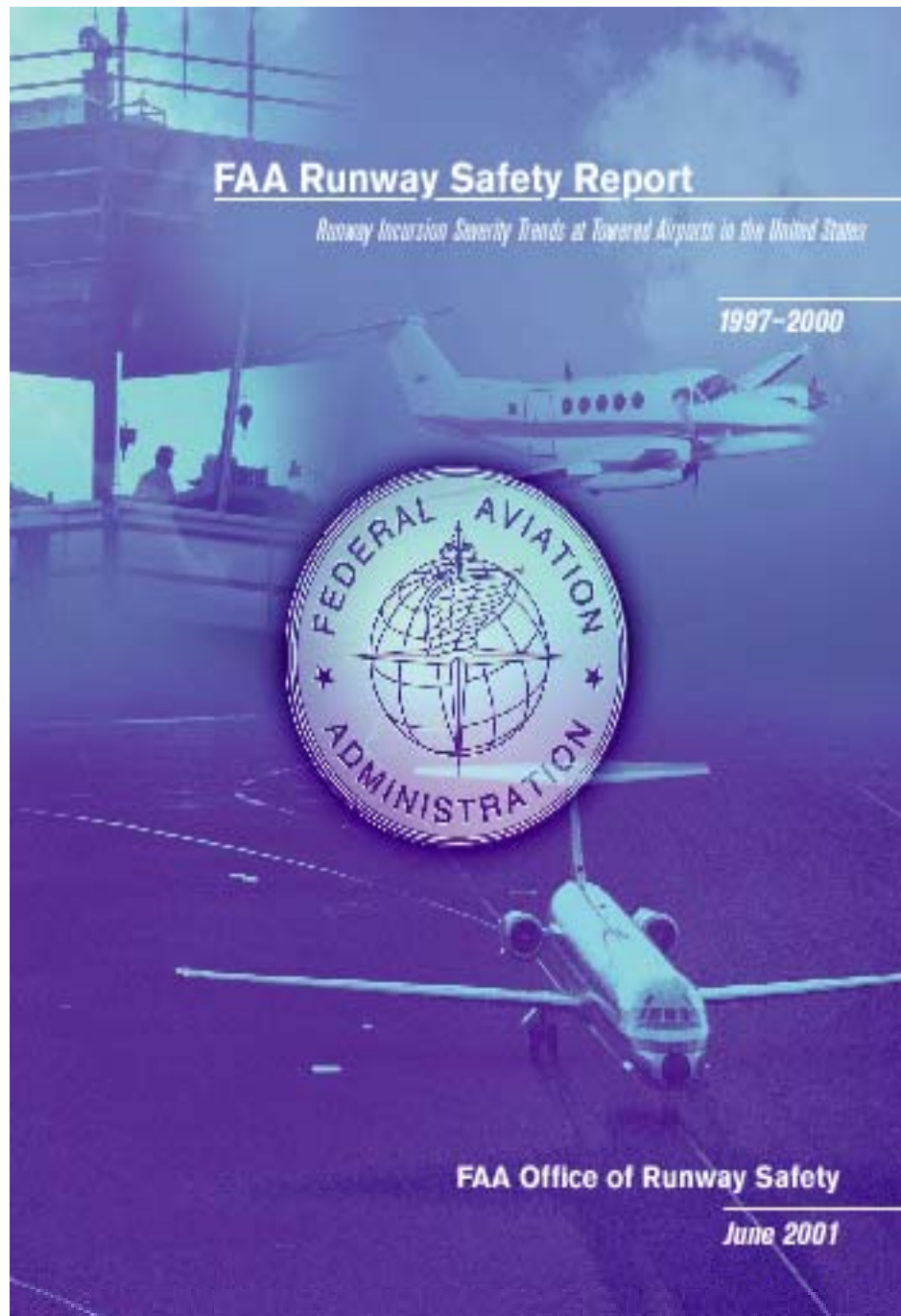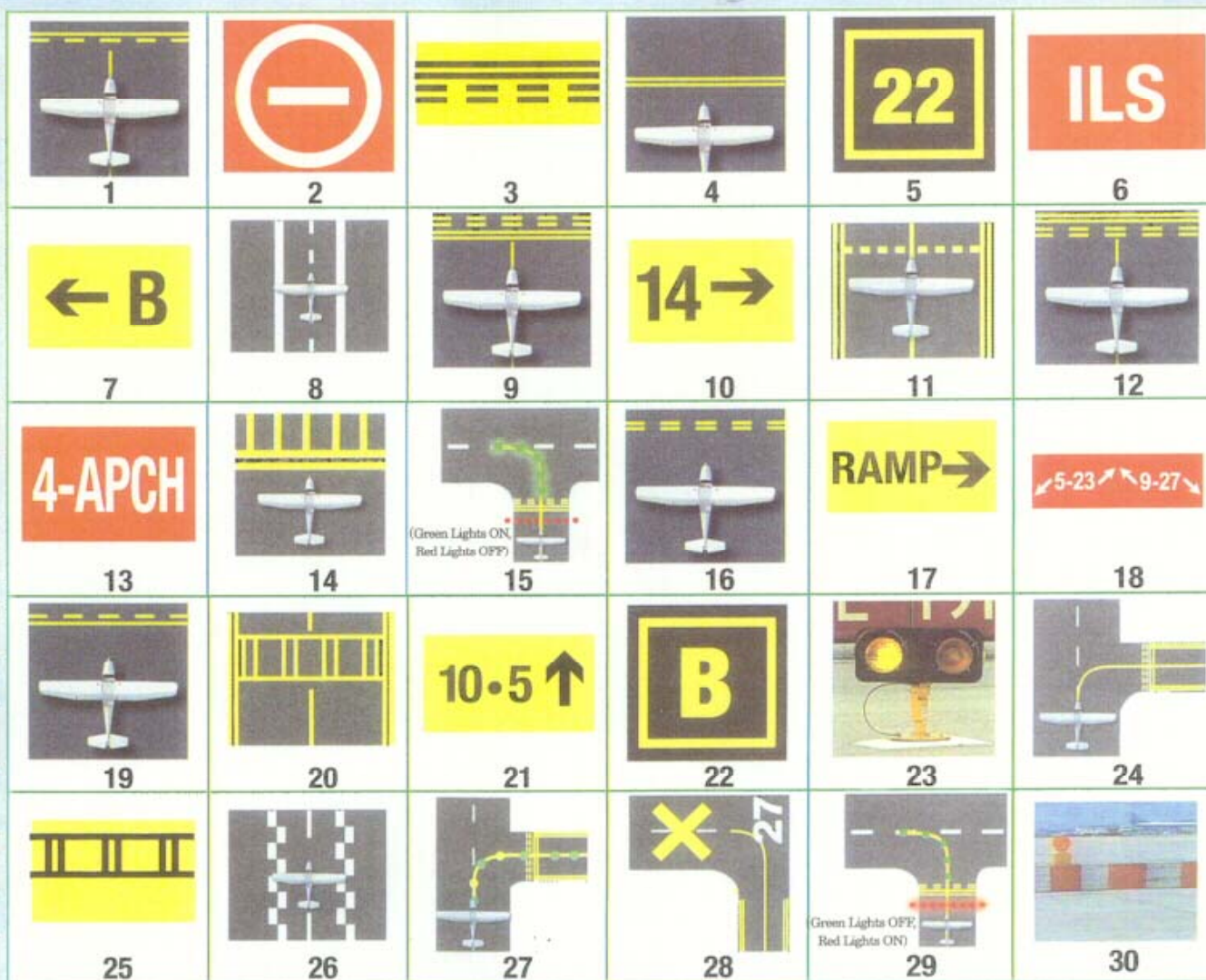
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The Cockpit ▶
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AOPA Online - Airport Taxi Diagrams - Microsoft Internet Explorer

File   Edit   View   Favorites   Tools   Help

← Back   →   🏠   Search   Favorites   History

Address http://www.aopa.org/asf/taxi/   Go   Links »

WELCOME TO AOPA

▶ AIR SAFETY FOUNDATION

HOME

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JOIN OR RENEW!

WHAT'S NEW

ADVOCACY

AOPA PILOT MAGAZINE

CERTIFIED PRODUCTS

Airport taxi diagrams

free! Receive a FREE Safety Advisor!

15-33 View the interactive Runway Safety Program

To reduce runway incursions and improve surface navigation, the AOPA Air Safety Foundation, in conjunction with the FAA Runway Safety Program Office, is pleased to provide airport taxi diagrams for more than 330 of the busiest U.S. towered airports. By special arrangement with Jeppesen Sanderson, Inc., an additional 133

Opening page http://www.aopa.org/asf/taxi/...   Unknown Zone

e Listen...We Respond   Unknown Zone (Mixe

National Blueprint

for

Runway Safety

October 2000

www.faa.gov/runwaysafety

FAA Runway Safety Report

Runway Incursion Severity Trends at Towered Airports in the United States

1997–2000

FAA Office of Runway Safety

June 2001

Airport Signs & Markings Quiz

NATIONAL RUNWAY SAFETY PROGRAM · FEDERAL AVIATION ADMINISTRATION

Start Here ➡

Place the number(s) of each sign or marking matching the description in the description box.
(Each sign or marking may be used once, more than once, or not at all.)

A. Indicates you are approaching a runway ....

B. Shows places you should not taxi an aircraft ....

C. Indicates you do, or may, need ATC approval to cross ....

D. Tells you the runway or taxiway you are on ....

E. Sign giving you directions to a runway, taxiway, or other airport destination ....

F. Indicates you're about to enter an area that could cause interference with an ILS signal ....

G. Helps you find your way off a runway ....

H. Confirms you are cleared onto a runway (tower - controlled airport) ....

I. Used to indicate you're about to cross a runway approach or departure path ....

J. Tells you where you should hold short of a crossing taxiway ....

1	2	3	4	5 (22)	6 (ILS)
7 (← B)	8	9	10 (14 →)	11	12
13 (4-APCH)	14	15 (Green Lights ON, Red Lights OFF)	16	17 (RAMP →)	18 (5-23 / 9-27)
19	20	21 (10·5 ↑)	22 (B)	23	24
25	26	27	28 (✕ 27)	29 (Green Lights OFF, Red Lights ON)	30

Advisory Circular

U.S. Department of Transportation

Federal Aviation Administration

Subject:	**PART 91 PILOT AND FLIGHTCREW PROCEDURES DURING TAXI OPERATIONS AND PART 135 SINGLE-PILOT OPERATIONS**	**Date:** 6/18/01 **Initiated by:**	**AFS-800**	**AC No:** **Change:**	**91-73**

1. PURPOSE. This advisory circular (AC) provides guidelines for the development and implementation of standard pilot procedures for conducting safe aircraft operations on the airport surface. It is intended for use by Title 14 of the Code of Federal Regulations (14 CFR) part 91 operators and part 135 operators conducting single pilot flight operations. These guidelines should become an integral part of all standard operating procedures, flight operations manuals, and formal training programs. Standard use of developed procedures should be emphasized during the certification and proficiency training of all pilots. The use of standard procedures for operating on the airport surface should further be emphasized during the flight review (refer to 14 CFR part 61, section 61.56) of all certificated pilots.

> **NOTE: Pilots operating aircraft under 14 CFR parts 121, 125, or 135 (those part 135 flight operations where 2 or more pilots are in the cockpit) refer to AC 120-XX, Part 121, 125, and 135 Flightcrew Procedures During Taxi Operations.**

2. FOCUS. This guidance focuses on the activities occurring on the flight deck/cockpit (e.g., planning, communicating, coordinating), as opposed to the actual control of the aircraft (e.g., climbing, descending, maneuvering). Although there are many similarities, taxi operations for single piloted aircraft, as opposed to taxi operations for aircraft that require more than one pilot, present distinct challenges and requirements. These distinct challenges are elaborated, when necessary, throughout the guidance. An additional section is provided concerning operations at airports without operating control towers. Finally, a section is devoted to the use of exterior aircraft lights in making an aircraft more conspicuous to all other persons directly involved in airport flight and ground operations.

3. RELATED READING MATERIAL. The following documents and web sites contain useful information regarding runway safety. FAA ACs can be found on

- Be aware
- Listen!
- Ask questions
- Stick to business
- *STOP* if in doubt
- Read back
- Once again ...

IF YOU DO NOT UNDERSTAND ASK!

10 Ways To Help Prevent
Runway Incursions

1 See The "Big Picture" Monitor both ground and tower communications when possible.

2 Transmit Clearly Make your instructions and read backs complete and easy to understand.

3 Listen Carefully Listen to your clearance. Listen to what you read back. Do not let communications become automatic.

4 Copy Clearances Clearances can change. Keep a note pad and copy your clearance. If needed refer to your notes.

5 Situational Awareness Know your location. If unfamiliar with an airport keep a current airport diagram available for easy reference.

6 Admit When Lost If you get lost on an airport ask ATC for help. Better to damage your pride than your airplane.

7 Sterile Cockpit Maintain a sterile cockpit until reaching cruising altitude. Explain to your passengers that talking should be kept to a minimum.

8 Understand Signs, Lights And Markings Keep current with airport signs, lights and markings. Know what they mean and what action to take.

9 Never Assume Do not take clearances for granted. Look both ways before entering or crossing taxiways and runways.

10 Follow Procedures Establish safe procedures for airport operations. Then follow them.

ANM Points of Contact
(ANM Runway Safety Team)

- *Runway Safety Program Manager, ANM-1R, Jim Greene, (425) 227-1369   Jim.k.greene@faa.gov*

- *Airports Division, ANM-600, Mark Taylor, (425) 227-2625 Mark.taylor@faa.gov*

- *Flight Standards, ANM-200, Mary Hoy, (425) 227-2262 Mary.Hoy@faa.gov*

- *Airway Facilities Operations, ANM-400, Willie Eigner, (425) 227-2336   Willie.eigner@faa.gov*

- *Air Traffic Control, ANM-500, Don Bringmann, (425) 227-2550 Donald.bringmann@faa.gov*

We Listen….

We Respond

Pickup Truck versus B-747

Local Problems require local Solutions

AIRCRAFT MOVEMENT AREA

STOP

DO NOT PROCEED WITHOUT CLEARANCE FROM PAINE TOWER

VEHICLES REQUIRE A FLASHING AMBER BEACON

AIRCRAFT TAXIWAY
TOWER CLEARANCE REQUIRED

**GATE
E-3**

**YOU ARE ENTERING AN AIR OPERATIONS AREA
AUTHORIZED VEHICLES & PERSONNEL ONLY**

VIOLATORS MAY BE PROSECUTED UNDER SNOHOMISH COUNTY CODE 15.08.651

STOP ON YELLOW LINE UNTIL GATE IS FULLY CLOSED BEHIND YOU

UNESCORTED FOLLOW-THROUGH VEHICLES ARE PROHIBITED
PLEASE REPORT VIOLATORS TO AIRPORT SECURITY 353-1606

DO NOT CROSS ▬▬▬ WITHOUT ATC AUTHORIZATION

YIELD TO ALL AIRCRAFT
SPEED LIMIT 15

1000' Runway Visual Range

Hold Short

Cleared onto the runway

Spokane International

Runway Incursions & Surface Incidents 1999-2001

CAUTION: BE ALERT TO RUNWAY CROSSING CLEARANCES
READBACK OF **ALL** RUNWAY HOLDING INSTRUCTIONS
IS **REQUIRED**

11/04/99: A/C instructed to taxi in position and hold on Runway 21. Aircraft started take-off roll.
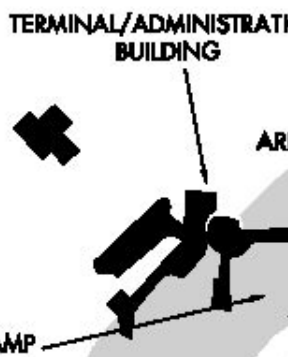
ATIS 124.325 254.375
SPOKANE TOWER
118.3 257.8
GND CON
121.9 348.6
CLNC DEL
127.55

Legend:
- Runway Incursion
- Surface Incident
- Pilot Error ●
- Operational Error ◆
- V/PD ■

VAR 18.3°E

JANUARY 1995
ANNUAL RATE OF CHANGE
0.1°W

TERMINAL/ADMINISTRATION BUILDING

TANKS
AIR CARGO
AIR CARGO RAMP
A-7
A-6
ARFF
A-5
A-4
TERMINAL RAMP
A-3
A-2
A-1
TWR 2457

RWY 3-21
S200, T200, ST175, TT400
RWY 7-25
S150, TT180, ST175, TT280

9000 X 150

WIND SOCK

B199 X 150

072.2°

ILS HOLD

FIELD ELEV 2372

027.2°

0.5% DOWN

970 X 150

ELEV 236B

ILS HOLD

ANG HANGAR

ANG RAMP

HOT CARGO

ELEV 2313
ILS HOLD
HANGAR
207.2°
1000 X 150
U.S. CUSTOMS
HANGARS
TRANSIENT RAMP
HANGARS
EAST RAMP
HANGAR
●ASOS
A 2501
HANGARS
252.2°
25
666 X 144
ELEV 2367

117°33'W

47°38'N
47°37'N

CAUTION: BE ALERT TO RUNWAY CROSSING CLEARANCES
READBACK OF ALL RUNWAY HOLDING INSTRUCTIONS IS REQUIRED

11/04/99: A/C instructed to taxi in position and hold on Runway 21. Aircraft started take-off roll.

Legend:
- Runway Incursion
- Surface Incident
- Pilot Error ●
- Operational Error ◆
- V/PD ■

ATIS 124.325 254.375
SPOKANE TOWER
118.3 257.8
GND CON
121.9 348.6
CLNC DEL
127.55

VAR 18.3°E

JANUARY 1995
ANNUAL RATE OF CHANGE
0.1°W

RWY 3-21
S200, T200, ST175, TT400
RWY 7-25
S150, TT180, ST175, TT280

072.2°

FIELD ELEV 2372

117°33'W

47°38'N

ELEV 2313

ILS HOLD
ILS HOLD

HANGAR

TANKS

AIR CARGO
AIR CARGO RAMP

TERMINAL/ADMINISTRATION BUILDING

ARFF

A-7
A-6
A-5
A-4
A-3
A-2
A-1

TERMINAL RAMP

TWR 2457

207.2°

-0.8%

U.S. CUSTOMS

HANGARS

TRANSIENT RAMP

HANGARS

EAST RAMP

HANGAR

ASOS

A 2501

HANGARS

9000 X 150

WIND SOCK

B 199 X 150

C

H

G

252.2°

25

47°37'N

ILS HOLD

027.2°

0.5% DOWN

970 X 150

ELEV 2368

ILS HOLD

ANG RAMP

ANG HANGAR

666 X 144

ELEV 2367

HOT CARGO

CAUTION: BE ALERT TO RUNWAY CROSSING CLEARANCES
READBACK OF ALL RUNWAY HOLDING INSTRUCTIONS IS REQUIRED

11/04/99: A/C instructed to taxi in position and hold on Runway 21. Aircraft started take-off roll.

ATIS 124.325 254.375
SPOKANE TOWER
118.3 257.8
GND CON
121.9 348.6
CLNC DEL
127.55

Legend:
- Runway Incursion
- Surface Incident
- Pilot Error
- Operational Error
- V/PD

VAR 18.3°E

JANUARY 1995
ANNUAL RATE OF CHANGE
0.1°W

TERMINAL/ADMINISTRATION BUILDING

ARFF

TERMINAL RAMP

TWR 2457

RWY 3-21
S200, T200, ST175, TT400
RWY 7-25
S150, TT180, ST175, TT280

072.2°

ILS HOLD

FIELD ELEV 2372

027.2°

0.5% DOWN

970 X 150

ELEV 236B

117°33'W

ILS HOLD

ANG HANGAR

ANG RAMP

9000 X 150

WIND SOCK

B199 X 150

C

AIR CARGO

AIR CARGO RAMP

A-7
A-6
A-5
A-4
A-3
A-2
A-1

TANKS

ELEV 2013

ILS HOLD

HANGAR

U.S. CUSTOMS

HANGARS

TRANSIENT RAMP

HANGARS

EAST RAMP

HANGAR

ASOS

A 2501

H

HANGARS

252.2°

666 X 144

ELEV 2367

HOT CARGO

47°38'N

47°37'N

-0.8% U

**CAUTION: BE ALERT TO RUNWAY CROSSING CLEARANCES
READBACK OF ALL RUNWAY HOLDING INSTRUCTIONS IS
REQUIRED**

11/04/99: A/C instructed to taxi in position and hold on Runway 21. Aircraft started take-off roll.

ATIS 124.325 254.375
SPOKANE TOWER
118.3 257.8
GND CON
121.9 348.6
CLNC DEL
127.55

Legend:
- Runway Incursion
- Surface Incident
- Pilot Error ●
- Operational Error ◆
- V/PD ▪

VAR 18.3°E

JANUARY 1995
ANNUAL RATE OF CHANGE
0.1°W

ELEV 2313
ILS HOLD
HANGAR
TANKS
AIR CARGO
AIR CARGO RAMP
TERMINAL/ADMINISTRATION BUILDING
A-7
A-6
ARFF
A-5
U.S. CUSTOMS
HANGARS
TRANSIENT RAMP
HANGARS
A-4
F
A-3
TERMINAL RAMP
A-2
EAST RAMP
HANGAR
A-1
TWR 2457
D E
D D
G

RWY 3-21
S200, T200, ST175, TT400
RWY 7-25
S150, TT180, ST175, TT280

ASOS
A 2501
HANGARS
9000 X 150
WIND SOCK
H
D
G
C
B 199 X 150
X X X X
252.2° X
25
072.2°
ILS HOLD
A
027.2°
0.5% DOWN
ANG RAMP
HOT CARGO
666 X 144
ELEV 2367

FIELD ELEV 2372
B
970 X 150
A
ELEV 2368
ILS HOLD
ANG HANGAR
1

117°33'W

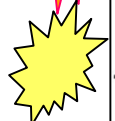**CAUTION: BE ALERT TO RUNWAY CROSSING CLEARANCES. READBACK OF ALL RUNWAY HOLDING INSTRUCTIONS IS REQUIRED**

ATIS 124.325 254.375
SPOKANE TOWER
118.3 257.8
GND CON
121.9 348.6
CLNC DEL
127.55

Legend:
- Runway Incursion
- Surface Incident
- Pilot Error ●
- Operational Error ◆
- V/PD ■

VAR 18.3°E

JANUARY 1995
ANNUAL RATE OF CHANGE
0.1°W

AIRPORT MAINTENANCE
TANKS
AIR CARGO
AIR CARGO RAMP
TERMINAL/ADMINISTRATION BUILDING
ARFF
TERMINAL RAMP

ILS HOLD
ELEV 2313
ILS HOLD
HANGAR
U.S. CUSTOMS
HANGAR
TRANSIENT RAMP
HANGARS
EAST RAMP
HANGAR
ASOS
HANGARS

A-7
A-6
A-5
A-4
A-3
A-2
A-1

TWR 2457

RWY 3-21
   S200, T200, ST175, TT400
RWY 7-25
   S150, TT180, ST175, TT280

9000 X 150
WIND SOCK
B199 X 150

072.2°
027.2°
0.5% DOWN
970 X 150
ELEV 2368

FIELD ELEV 2372

ILS HOLD

ANG RAMP
ILS HOLD
ANG HANGAR
HOT CARGO

252.2°
666 X 144
ELEV 2367

A 2501
A 2501

252.2°
25

47°38'N
47°37'N

117°33'W

1000 X 150

4/16/2000 - A Piper-28 taxied across Runway 3 and Taxiway "F" after being cleared to Runway 3.

CAUTION: BE ALERT TO RUNWAY CROSSING CLEARANCES
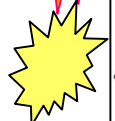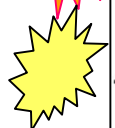READBACK OF ALL RUNWAY HOLDING INSTRUCTIONS IS
REQUIRED

ATIS 124.325 254.375
SPOKANE TOWER
118.3 257.8
GND CON
121.9 348.6
CLNC DEL
127.55

Legend:
- Runway Incursion
- Surface Incident
- Pilot Error •
- Operational Error ◆
- V/PD ■

VAR 18.3°E

JANUARY 1995
ANNUAL RATE OF CHANGE
0.1°W

AIRPORT MAINTENANCE

TANKS

AIR CARGO

AIR CARGO RAMP

TERMINAL/ADMINISTRATION BUILDING

ILS HOLD

ELEV 2313

1000 X 150

ILS HOLD

HANGAR

207.2°

0.8% UP

A-7
A-6

ARFF

A-5

F

A-4

U.S. CUSTOMS

HANGAR

TRANSIENT RAMP

HANGARS

TERMINAL RAMP

A-3

A-2

A-1

D

E

D

F

G

EAST RAMP

HANGAR

ASOS

A 2501

HANGARS

TWR 2457

RWY 3-21
S200, T200, ST175, TT400
RWY 7-25
S150, TT180, ST175, TT280

9000 X 150

H

G

A

D

C

WIND SOCK

B199 X 150

G

X X X X X
252.2° X

25

072.2°

ILS HOLD

A

027.2°

0.5% DOWN

ILS HOLD

ANG RAMP

ANG HANGAR

D

G

J

HOT CARGO

J

666 X 144

ELEV 2367

FIELD ELEV 2372

B

970 X 150

A

ELEV 236B

47°38'N

47°37'N

117°33'W

4/16/2000 - A Piper-28 taxied across Runway 3 and Taxiway "F" after being cleared to Runway 3.

CAUTION: BE ALERT TO RUNWAY CROSSING CLEARANCES
READBACK OF ALL RUNWAY HOLDING INSTRUCTIONS IS REQUIRED

Spokane International Airport (GEG) Airport Diagram

Communications:
ATIS 124.325 254.375
SPOKANE TOWER
118.3 257.8
GND CON
121.9 348.6
CLNC DEL
127.55

Legend:
- Runway Incursion
- Surface Incident
- Pilot Error ●
- Operational Error ◆
- V/PD ■

VAR 18.3°E

JANUARY 1995
ANNUAL RATE OF CHANGE
0.1°W

RWY 3-21
  S200, T200, ST175, TT400
RWY 7-25
  S150, TT180, ST175, TT280

FIELD ELEV 2372

072.2°

027.2°

0.5% DOWN

970 X 150

ELEV 2368

117°33'W

AIRPORT MAINTENANCE
TANKS
AIR CARGO
AIR CARGO RAMP
TERMINAL/ADMINISTRATION BUILDING
ARFF
TERMINAL RAMP
TWR 2457
WIND SOCK
9000 X 150
B199 X 150
C
ANG RAMP
ILS HOLD
ANG HANGAR

ILS HOLD
ELEV 2313
1000 X 150
ILS HOLD
HANGAR
207.2°
0.8% UP
U.S. CUSTOMS
HANGAR
TRANSIENT RAMP
HANGARS
EAST RAMP
HANGAR
ASOS
HANGARS
A 2501
H
252.2°
ELEV 2367
666 X 144
HOT CARGO

47°38'N
47°37'N

4/16/2000 - A Piper-28 taxied across Runway 3 and Taxiway "F" after being cleared to Runway 3.

CAUTION: BE ALERT TO RUNWAY CROSSING CLEARANCES READBACK OF ALL RUNWAY HOLDING INSTRUCTIONS IS REQUIRED
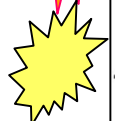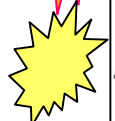
ATIS 124.325 254.375
SPOKANE TOWER
118.3 257.8
GND CON
121.9 348.6
CLNC DEL
127.55

Legend:
- Runway Incursion
- Surface Incident
- Pilot Error ●
- Operational Error ◆
- V/PD ■

VAR 18.3°E

JANUARY 1995
ANNUAL RATE OF CHANGE
0.1°W

AIRPORT MAINTENANCE

TANKS

AIR CARGO

AIR CARGO RAMP

TERMINAL/ADMINISTRATION BUILDING

ARFF

ILS HOLD

ELEV 2313

ILS HOLD

HANGAR

207.2°

1000 X 150

-0.8% UP

U.S. CUSTOMS

HANGAR

TRANSIENT RAMP

HANGARS

A-7
A-6
A-5
A-4
A-3
A-2
A-1

F

TERMINAL RAMP

TWR 2457

EAST RAMP

HANGAR
ASOS

4/16/2000 - A Piper-28 taxied across Runway 3 and Taxiway "F" after being cleared to Runway 3.

RWY 3-21
  S200, T200, ST175, TT400
RWY 7-25
  S150, TT180, ST175, TT280

9000 X 150

WIND SOCK

H

HANGARS

A 2501

072.2°

8199 X 150

252.2°

25

47°37'N

ILS HOLD

027.2°

0.5% DOWN

C

ANG RAMP

ILS HOLD

FIELD ELEV 2372

970 X 150

ELEV 2368

ANG HANGAR

HOT CARGO

666 X 144

ELEV 2367

117°33'W

**CAUTION: BE ALERT TO RUNWAY CROSSING CLEARANCES
READBACK OF ALL RUNWAY HOLDING INSTRUCTIONS IS
REQUIRED**

ATIS 124.325 254.375
SPOKANE TOWER
118.3 257.8
GND CON
121.9 348.6
CLNC DEL
127.55

Legend:

- Runway Incursion — (orange star)
- Surface Incident — (yellow star)
- Pilot Error — ●
- Operational Error — ◆ (blue)
- V/PD — ■ (green)

VAR 18.3°E

JANUARY 1995
ANNUAL RATE OF CHANGE
0.1°W

RWY 3-21
  S200, T200, ST175, TT400
RWY 7-25
  S150, TT180, ST175, TT280

072.2°

FIELD
ELEV
2372

027.2°

0.5% DOWN

970 X 150

ELEV
236B

ILS
HOLD

ANG
HANGAR

117°33'W

AIRPORT MAINTENANCE

TANKS

AIR CARGO

AIR CARGO RAMP

TERMINAL/ADMINISTRATION BUILDING

ARFF

A-7
A-6
A-5

TERMINAL RAMP

A-4
A-3
A-2
A-1

TWR
2457

WIND SOCK

9000 X 150

C

B199 X 150

A

D
E
D

F

207.2°
-0.8% UP

1000 X 150

ILS HOLD

ELEV
2313

ILS HOLD

HANGAR

U.S. CUSTOMS

G
G
G

HANGAR

TRANSIENT RAMP

HANGARS

EAST RAMP

HANGAR

● ASOS

H

G

A 2501

HANGARS

G

G

X X X X X
252.2° X

25

ELEV
2367

666 X 144

ANG RAMP

ILS HOLD

HOT CARGO

J

D

G

J

4/16/2000 - A Piper-28 taxied across Runway 3 and Taxiway "F" after being cleared to Runway 3.

47°38'N

47°37'N

CAUTION: BE ALERT TO RUNWAY CROSSING CLEARANCES
READBACK OF ALL RUNWAY HOLDING INSTRUCTIONS IS REQUIRED

A Cessna 182 landing Runway 25 was instructed to exit Taxiway "D" and contact Ground Control. The C-182 then taxied across Runway 21 after contacting GC and being instructed to taxi to the ramp. A Boeing 735 had been cleared for takeoff but had not entered onto Runway 21. 10-03-2000

ATIS 124.325 254.375
SPOKANE TOWER
118.3 257.8
GND CON
121.9 348.6
CLNC DEL
127.55

Legend:
- Runway Incursion
- Surface Incident
- Pilot Error ●
- Operational Error ◆
- V/PD ■

JANUARY 1995
ANNUAL RATE OF CHANGE
0.1°W

TERMINAL/ADMINISTRATION BUILDING

ARFF

AIR CARGO RAMP

TANKS

ILS HOLD

ELEV 2313

ILS HOLD

HANGAR

U.S. CUSTOMS

HANGARS

TRANSIENT RAMP

HANGARS

TERMINAL RAMP

EAST RAMP

HANGAR

ASOS

RWY 3-21
S200, T200, ST175, TT400
RWY 7-25
S150, TT180, ST175, TT280

TWR 2457

A 2501

HANGARS

WIND SOCK

9000 X 150

8199 X 150

666 X 144

ELEV 2367

072.2°

ILS HOLD

FIELD ELEV 2372

027.2°

0.5% DOWN

970 X 150

ELEV 2368

ILS HOLD

ANG RAMP

ANG HANGAR

HOT CARGO

117°33'W

47°38'N

47°37'N

CAUTION: BE ALERT TO RUNWAY CROSSING CLEARANCES
READBACK OF ALL RUNWAY HOLDING INSTRUCTIONS IS REQUIRED

A Cessna 182 landing Runway 25 was instructed to exit Taxiway "D" and contact Ground Control. The C-182 then taxied across Runway 21 after contacting GC and being instructed to taxi to the ramp. A Boeing 735 had been cleared for takeoff but had not entered onto Runway 21. 10-03-2000

ATIS 124.325 254.375
SPOKANE TOWER
118.3 257.8
GND CON
121.9 348.6
CLNC DEL
127.55

Runway Incursion
Surface Incident
Pilot Error
Operational Error
V/PD

47°38'N

ILS HOLD
ELEV 2313
ILS HOLD
HANGAR

TANKS

AIR CARGO RAMP

TERMINAL/ADMINISTRATION BUILDING

JANUARY 1995
ANNUAL RATE OF CHANGE
0.1°W

ARFF

A-7
A-6
A-5

U.S. CUSTOMS

HANGARS

TRANSIENT RAMP

HANGARS

TERMINAL RAMP

A-4
A-3
A-2
A-1

EAST RAMP

TWR 2457

RWY 3-21
    S200, T200, ST175, TT400
RWY 7-25
    S150, TT180, ST175, TT280

HANGAR
ASOS

A 2501

9000 X 150

WIND SOCK

H

HANGARS

072.2°

C

B 199 X 150

252.2°

25

47°37'N

FIELD ELEV 2372

ILS HOLD

A

027.2°

0.5% DOWN

ANG RAMP

ILS HOLD

666 X 144

ELEV 2367

970 X 150

ELEV 2368

ANG HANGAR

HOT CARGO

CAUTION: BE ALERT TO RUNWAY CROSSING CLEARANCES
READBACK OF ALL RUNWAY HOLDING INSTRUCTIONS IS
REQUIRED

117°33'W

A Cessna 182 landing Runway 25 was instructed to exit Taxiway "D" and contact Ground Control. The C-182 then taxied across Runway 21 after contacting GC and being instructed to taxi to the ramp. A Boeing 735 had been cleared for takeoff but had not entered onto Runway 21. 10-03-2000

Legend:
- Runway Incursion
- Surface Incident
- Pilot Error ●
- Operational Error ◆
- V/PD ■

ATIS 124.325 254.375
SPOKANE TOWER
118.3 257.8
GND CON
121.9 348.6
CLNC DEL
127.55

JANUARY 1995
ANNUAL RATE OF CHANGE
0.1°W

TERMINAL/ADMINISTRATION BUILDING

AIR CARGO RAMP

TANKS

ILS HOLD
ELEV 2313
1000 X 150
ILS HOLD
HANGAR

ARFF

U.S. CUSTOMS

A-7
A-6
A-5
A-4
A-3
A-2
A-1

TERMINAL RAMP

HANGARS
TRANSIENT RAMP
HANGARS

EAST RAMP

HANGAR
● ASOS

A 2501

TWR 2457

RWY 3-21
S200, T200, ST175, TT400
RWY 7-25
S150, TT180, ST175, TT280

9000 X 150

WIND SOCK

H

HANGARS

C

072.2°

B199 X 150

252.2°

ILS HOLD

027.2°

0.5% DOWN

ANG RAMP

ILS HOLD

ANG HANGAR

HOT CARGO

666 X 144
ELEV 2367

FIELD ELEV 2372

970 X 150

ELEV 2368

47°38'N

47°37'N

117°33'W

**CAUTION: BE ALERT TO RUNWAY CROSSING CLEARANCES
READBACK OF ALL RUNWAY HOLDING INSTRUCTIONS IS REQUIRED**

A Cessna 182 landing Runway 25 was instructed to exit Taxiway "D" and contact Ground Control. The C-182 then taxied across Runway 21 after contacting GC and being instructed to taxi to the ramp. A Boeing 735 had been cleared for takeoff but had not entered onto Runway 21. 10-03-2000

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SPOKANE TOWER
118.3 257.8
GND CON
121.9 348.6
CLNC DEL
127.55

Runway Incursion

Surface Incident

Pilot Error ●

Operational Error ◆

V/PD ■

ILS HOLD
ELEV 2313
ILS HOLD
HANGAR

TANKS

AIR CARGO RAMP

TERMINAL/ADMINISTRATION BUILDING

JANUARY 1995
ANNUAL RATE OF CHANGE
0.1°W

A-7
A-6
A-5
A-4
A-3
A-2
A-1

ARFF

TERMINAL RAMP

U.S. CUSTOMS

HANGARS

TRANSIENT RAMP

HANGARS

EAST RAMP

TWR 2457

HANGAR
● ASOS

A 2501

RWY 3-21
S200, T200, ST175, TT400
RWY 7-25
S150, TT180, ST175, TT280

9000 X 150

WIND SOCK

H

HANGARS

C

B 199 X 150

252.2°

072.2°

ILS HOLD

027.2°

0.5% DOWN

FIELD ELEV 2372

970 X 150

ELEV 2368

ILS HOLD

ANG HANGAR

ANG RAMP

HOT CARGO

666 X 144

ELEV 2367

47°38'N

1000 X 150

47°37'N

117°33'W

CAUTION: BE ALERT TO RUNWAY CROSSING CLEARANCES
READBACK OF ALL RUNWAY HOLDING INSTRUCTIONS IS
REQUIRED

A Cessna 182 landing Runway 25 was instructed to exit Taxiway "D" and contact Ground Control. The C-182 then taxied across Runway 21 after contacting GC and being instructed to taxi to the ramp. A Boeing 735 had been cleared for takeoff but had not entered onto Runway 21. 10-03-2000

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SPOKANE TOWER
118.3 257.8
GND CON
121.9 348.6
CLNC DEL
127.55

Legend:
- Runway Incursion
- Surface Incident
- Pilot Error ●
- Operational Error ◆
- V/PD ■

JANUARY 1995
ANNUAL RATE OF CHANGE
0.1°W

TERMINAL/ADMINISTRATION BUILDING

AIR CARGO RAMP

A-7
A-6
A-5
A-4
A-3
A-2
A-1

ARFF

TERMINAL RAMP

TWR 2457

RWY 3-21
S200, T200, ST175, TT400
RWY 7-25
S150, TT180, ST175, TT280

9000 X 150

WIND SOCK

B 199 X 150

072.2°

ILS HOLD

FIELD ELEV 2372

027.2°

0.5% DOWN

970 X 150

ELEV 2368

ILS HOLD

ANG HANGAR

ANG RAMP

HOT CARGO

117°33'W

ELEV 2313

1000 X 150

ILS HOLD

HANGAR

U.S. CUSTOMS

HANGARS

TRANSIENT RAMP

HANGARS

EAST RAMP

HANGAR

ASOS

A 2501

H

HANGARS

252.2°

ELEV 2367

666 X 144

47°38'N

47°37'N

CAUTION: BE ALERT TO RUNWAY CROSSING CLEARANCES
READBACK OF ALL RUNWAY HOLDING INSTRUCTIONS IS
REQUIRED

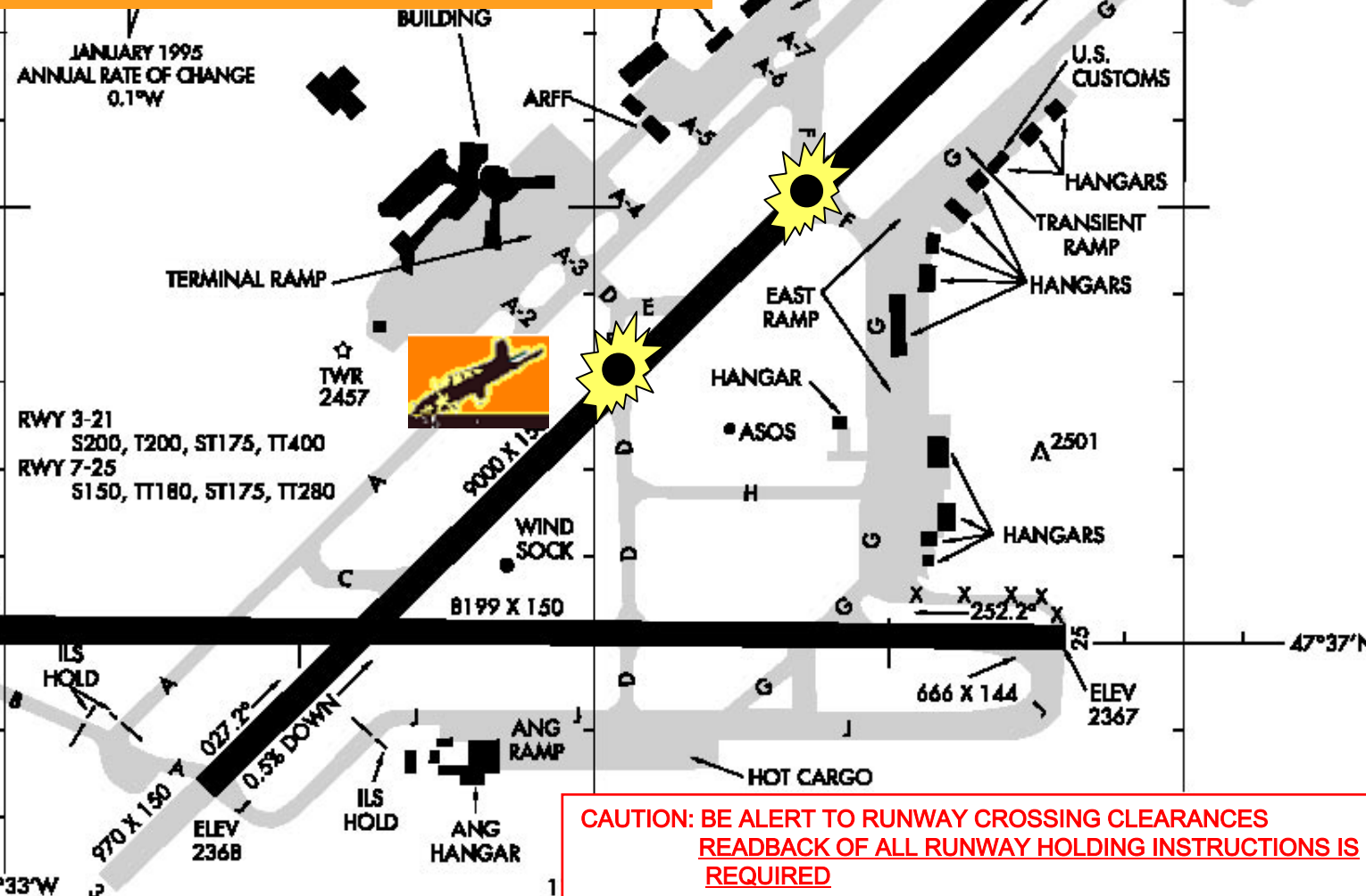Beech BE58, was instructed to taxi to Runway 7 and crossed the hold line without authorization. Local controller observed the incursion and the conflict with B-737, on approximately ½ mile final same runway. B-737 was sent around. 6-20-2001

Legend:
- Runway Incursion
- Surface Incident
- Pilot Error ●
- Operational Error ◆
- V/PD ■

ATIS 124.325 254.375
SPOKANE TOWER
118.3 257.8
GND CON
121.9 348.6
CLNC DEL
127.55

JANUARY 1995
ANNUAL RATE OF CHANGE
0.1°W

TERMINAL RAMP

TWR 2457

RWY 3-21
S200, T200, ST175, TT400
RWY 7-25
S150, TT180, ST175, TT280

072.2°

FIELD
ELEV
2372

117°33'W

ILS HOLD

027.2°

0.5% DOWN

970 X 150

ELEV
2368

ILS HOLD

ANG HANGAR

ANG RAMP

WIND SOCK

B 199 X 150

9000 X 150

C

ASOS

HANGAR

HOT CARGO

EAST RAMP

TRANSIENT RAMP

HANGARS

HANGARS

HANGARS

U.S. CUSTOMS

AIR CARGO RAMP

TANKS

PORT MAINTENANCE

BUILDING

ARFF

ILS HOLD
ELEV 2313

ILS HOLD

HANGAR

207.2°
0.8% UP

1000 X 150

A2501

ELEV 2367

666 X 144

252.2°

47°38'N

47°37'N

A2501

CAUTION: BE ALERT TO RUNWAY CROSSING CLEARANCES
READBACK OF ALL RUNWAY HOLDING INSTRUCTIONS IS
REQUIRED

Beech BE58, was instructed to taxi to Runway 7 and crossed the hold line without authorization. Local controller observed the incursion and the conflict with B-737, on approximately ½ mile final same runway. B-737 was sent around. 6-20-2001

Legend:
- Runway Incursion
- Surface Incident
- Pilot Error ●
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- V/PD ■

ATIS 124.325 254.375
SPOKANE TOWER
118.3 257.8
GND CON
121.9 348.6
CLNC DEL
127.55

JANUARY 1995
ANNUAL RATE OF CHANGE
0.1°W

RWY 3-21
S200, T200, ST175, TT400
RWY 7-25
S150, TT180, ST175, TT280

FIELD ELEV 2372

072.2°

027.2°

0.5% DOWN

970 X 150

ELEV 2368

117°33'W

9000 X 150

B199 X 150

WIND SOCK

ASOS

TWR 2457

TERMINAL RAMP

BUILDING

AIR CARGO RAMP

TANKS

ARFF

ILS HOLD

ELEV 2313

ILS HOLD

HANGAR

U.S. CUSTOMS

HANGARS

TRANSIENT RAMP

HANGARS

EAST RAMP

HANGAR

A 2501

HANGARS

252.2°

ELEV 2367

666 X 144

ANG RAMP

ILS HOLD

ANG HANGAR

HOT CARGO

47°38'N

1000 X 150

207.2°

0.8% UP

CAUTION: BE ALERT TO RUNWAY CROSSING CLEARANCES READBACK OF ALL RUNWAY HOLDING INSTRUCTIONS IS REQUIRED

Local Problems require local Solutions

- Airport Traffic Control Tower

- Spokane International Airport